

CLAIMS

1. (previously presented) Dry powder inhaler (1) with a mouthpiece (2) for dispersing pharmaceutical drug formulations, having an auxiliary energy source in the form of a pressure medium system (3), with a device for provisioning (6) of a powder formulation (7), whereby upon activation of the pressure medium system a gaseous pressure medium (8) released by the pressure medium system (3) forms with the powder formulation (7) an aerosol (9) in such a way that the powder particles are present in dispersed form within the gaseous pressure medium (8), characterized in that provided in the inhaler (1) is a Laval nozzle (10) through which the aerosol (9) flows before leaving the inhaler (1).

2–6. (cancelled)

7. (currently amended) Dry powder inhaler (1) according to claim 1, characterized in that the narrowest cross section (14) of the Laval nozzle (10) is 100 μm to 1500 μm , ~~preferably 400 μm to 800 μm , in diameter.~~

8. (cancelled)

9. (previously presented) Dry powder inhaler (1) according to claim 1, characterized in that the pressure medium system (3) exhibits a pump that is connected to the surroundings and uses ambient air as the pressure medium (8).

10. (previously presented) Dry powder inhaler (1) according to claim 1,
characterized in that the pressure medium system (3) includes a cartridge that stores
the pressure medium (8).

11. (cancelled)

12. (previously presented) Dry powder inhaler (1) according to claim 10,
characterized in that air, N₂, CO₂, Ar, or He is provided as the pressure medium (8).

13. (previously presented) Dry powder inhaler (1) according to claim 1,
characterized in that the device for provisioning (6) of the powder formulation (7) is
placed between the pressure medium system (3) and the Laval nozzle (10) in such a
way that the pressure medium (8) must pass through the device (6).

14. (previously presented) Dry powder inhaler (1) according to claim 1,
characterized in that the device for provisioning (6) of the powder formulation (7)
comprises a capsule (15) filled with powder (7).

15. (cancelled)

16. (previously presented) Dry powder inhaler (1) according to claim 1,
characterized in that the device for provisioning (6) of the powder formulation (7)
comprises a multidose blister container.

17. (previously presented) Dry powder inhaler (1) according to claim 1, wherein the mouthpiece (2) comprises a flow rate sensor (19) that generates an input signal for the pressure medium system (3).

18. (previously presented) Dry powder inhaler (1) according to claim 1, further comprising an inlet channel, whereby inhalation air is drawn in through the inlet channel, and whereby a swirling flow of the inhalation air is created between the outlet section (12) and the outlet of the mouthpiece (2).

19. (previously presented) Dry powder inhaler (1) according to claim 1, characterized in that the Laval nozzle (10) and an inlet channel (18) for inhalation air are arranged in such a way that the aerosol flow leaving the Laval nozzle (10) and the inhalation air are directed in opposite directions (Fig. 7).

20. (previously presented) Dry powder inhaler (1) according to claim 1, characterized in that the Laval nozzle (10) and an inlet channel (18) for inhalation air are arranged in such a way that the aerosol flow leaving the Laval nozzle (10) and the inhalation air collide with each other at an angle.

21. (previously presented) Dry powder inhaler (1) according to claim 18, characterized in that the channel (30) that guides the aerosol flow and the inlet channels (18) for the inhalation air empty into a swirl chamber (29), whereby the aerosol cloud is directed from the swirl chamber (29) to the Laval nozzle (10) (Fig. 6).

22–34. (cancelled)